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Estonian object and adverbial case with verbs of motion

Introduction

This article is about the nature of the bounded interpretation of Estonian sentences such as (1) and some related issues, such as the relation between aspect and case marking with motion verbs.

(1) *Takso* *sõidutas* *Peetrit* *edasi*
Taxi.nom drove.3.sg.past Peeter.part further
'The taxi drove Peeter further.'

More specifically, this article clarifies the nature of boundedness and asks the following question: Why can some but not all sentences with partitive objects have a bounded interpretation? The proposal that I make for clarity's sake is to distinguish two types of boundedness, minimal („adverbial") and maximal („object") boundedness, and two types of predicates, scalar and nonscalar. The proposal about sentence (1) is that it expresses boundedness, but the type of boundedness is more precisely characterized as minimal boundedness. The type of predicate in (1) is scalar.

First, I review earlier references to how object case marking and measure adverbial case marking can have an effect on the aspectual interpretation of the sentence. Second, I present bounded sentences with motion verbs that contain both objects and measure adverbials. Third, I show that the omission of measure adverbials in sentences does not necessarily change the minimal boundedness of the sentence. The hypothesis proposed in section 3 is that it is the nature of the predicate that determines the effect; the minimally bounded interpretation can emerge only with scalar predicates. Fourth, I contrast scalar and nonscalar predicates. Finally, I present some possibilities of fitting the total case marking and partitive case marking into a grammar.

1 Object and measure adverbial case marking

This article distinguishes between maximal boundedness, which is related to the total object case in transitive sentences, and minimal boundedness, which is generally related to the total (nominative) case marking on measure adverbials. If an event is described as minimally bounded, it can continue; if an event is described as maximally bounded, it cannot continue. This section critically reviews earlier references to parallels between object and measure adverbial case marking and the effect on aspectual interpretation. Aspect is frequently seen in terms of boundedness, and boundedness is recognized as the central concept that characterizes Finnish and Estonian perfectivity (e.g. Sulkala 1996). Sentences that are here termed non-bounded are referred to as imperfective, unbounded, irresultative, durative, coursive, atelic, or activity ones in various sources. Sentences are referred to as such by virtue of the nature of the verbs they contain and, more frequently, by virtue of the described situations or the viewpoint. Sentences that are here termed bounded are typically referred to as perfective, bounded, resultative, terminative, telic, achievement, or accomplishment ones. Estonian works point out that sentences with total objects such as (2) have a bounded (or related) interpretation. Partitive objects are in turn associated with a non-bounded (or related) interpretation as in (3). I regard sentences bounded if they describe an event that has reached an endpoint.

(2) *Mari* *ostis* *raamatu*
M.nom buy.3.sg.past book.gen
'Mari bought a/the book.'

Sentence (2) with the total object is bounded, since the event of buying a book has reached its endpoint. I regard sentences non-bounded if they describe an event that has not reached an endpoint.

(3) *Mari* *ostis* *raamatut*
M.nom buy.3.sg.past book.part
'Mari was buying a/the book.'

Sentence (3) with the partitive object is non-bounded; it is not clear from this sentence whether the event of buying a book has reached any endpoint.

Similarly to objects, the heads of Estonian measure adverbials are case marked with object cases: partitive vs. total (genitive or nominative). Many earlier sources have mentioned the aspectual effect of the case alternation of the Estonian measure adverbials (Erelt 2003: 105; Erelt et al. 1993; Metslang 2001;

Sulkala 1996). The following (4) and (5) are frequently presented types of examples of aspectual measure adverbial case alternation, with partitive case marking in (4) and total (genitive) case marking in (5).

(4) *Jooksin* *üht(e)* *kilomeetrit* *kui ....*
Run.1.sg.past one.part kilometer.part when
'I was running one kilometer when....'

(5) *Jooksin* *ühe* *kilomeetri.*
Run.1.sg.past one.gen kilometer.gen
'I ran one kilometer.'

Sentence (4) with a measure phrase is non-bounded and sentence (5) with a total case marked measure phrase is bounded. However, there are measure adverbials proper and measure phrases that are in fact „untypical" objects. There are reasons to regard the phrases in (4) and (5) as objects even if these phrases have the form of a measure phrase, denote a distance-related measure and occur with the verb „run", which is typically used intransitively. Measure phrase is a term for phrases that are composed of a quantizer or a cardinal head in nominative and the noun phrase complement in partitive ((6), (8), (10)). Alternatively, the head is total case marked (with the cardinal „one") (7), (9), (11). This paper mainly studies the latter alternative. Phrases with this form have a different function in sentences.

1.temporal (6) *viis* *minutit*
five.nom minute.part
'five minutes'

(7) *(ühe)* *tunni*
one.gen hour.gen
'an hour'

2. distance (8) *kaks* *kilomeetrit*
two.nom kilometer.part
'two kilometers'

(9) *(ühe)* *kilomeetri*
one.gen kilometer.gen
'one kilometer'

3. multiplicative (10) *kaks* *korda*
two.nom time.part
'twice'

(11) *(ühe)* *korra*
one.gen time.gen
'once'

As an argument for being considered an object, the measure phrase in (5) has nominative marking in impersonal and passive sentences. Despite their semantic content and morphological form, thus, measure phrases such as the ones illustrated in (6) – (11) do not always appear as genuine case marked measure adverbials but as objects (with nominative marking, also as subjects). If the measure phrases do not appear as objects or subjects, and they have the form and content as illustrated above, then I refer to them as „bounded adverbials". The measure phrases in (12) and (13), however, cannot be analysed as objects; they are measure adverbials.

(12) *Takso* *sõidutas* *Peetrit* *viis* *kilomeetrit.*
Taxi.nom drive.3.sg.past Peeter.part five.nom kilometer.part
'The taxi drove Peeter five kilometers.' (Sulkala 1996:186)

(13) *Takso* *sõidutas* *Peetri* *viis* *kilomeetrit* *Oulust* *lõuna poole*
Taxi.nom drive.3. sg.past Peeter. gen five. nom kilometer. part Oulu.ela south-wards
'The taxi drove Peeter five kilometers south of Oulu' (Sulkala 1996:186)

It is the phrase with „Peeter" and not the measure phrase that can become the nominative-marked subject of the passivized sentence, being the object of the sentence (13); the measure phrase is not. Note that the object is partitive (12) or total (13), but both sentences are bounded. The head of the measure adverbial phrase is nominative in both sentences. Sentence (12) with the partitive object is an example of minimal boundedness and sentence (13) with the total object is an example of maximal boundedness.

Does it hold then at all that there is aspectual measure adverbial case alternation if the attested measure adverbials proper are in total (or nominative) case only and the case alternating phrases are in fact objects? Neither sentence (12) nor (13) could have a partitive adverbial. This is illustrated explicitly in (14), where the head of the measure adverbial *five kilometers* cannot appear with partitive marking in a sentence with a total or a partitive object.

(14)	**Takso*	*sõidutas*	*Peetrit/ Peetri*	*viit/ühte*	*kilomeetrit*	*lõuna poole.*
	T.nom	drive.3.sg. past	P.part/gen	five/one.part	km.part	south-wards

'The taxi drove Peeter for five kilometers southwards.'

However, a partitive measure adverbial, if plural, is grammatical in a non-bounded sentence (15) with a partitive object. The event described in (15) has no endpoint and the sentence is non-bounded.

(15)	*Takso*	*sõidutas*	*kahte/ *kaks*	*poissi*	*pikki*	*kilomeetreid*	*lõuna poole.*
	T.nom	drive.3.sg. past	two.part/ *nom	boy.part	long.pl part	kilometer.pl. part	south-wards

'The taxi drove two boys for long kilometers southwards.'

A total object is not grammatical in (15) with a partitive plural measure phrase. Example (15) also demonstrates that the numeral head can be partitive only in a phrase that is an object, whereas example (14) shows that a similar case alternation on numeral heads does not occur with measure adverbials (with the exception of *ki*-cliticized ones in negated sentences, not discussed here). In sum, many measure adverbials are plural and semantically non-quantized when they have partitive marking in non-bounded sentences such as (15). The partitive of these measure adverbials may be a case form that is determined lexically in present-day Estonian. Thus, there is not enough evidence for considering measure adverbial case alternation to be as clearly related to aspectual phenomena as object case alternation. In the following discussion only the case marking of phrases with the cardinal „one" will be studied for more evident case effects.

In conclusion, the total (genitive/nominative) case of objects and measure adverbials and case alternation of objects relates differently to aspectual phenomena. Total or nominative case marked measure adverbials and objects appear in bounded sentences only. Examples (12) and (13) containing a total case marked, bounded measure adverbial are bounded despite their object case; sentence (15) with two partitive marked measure phrases is non-bounded. Total objects emerge in maximally bounded sentences. Partitive objects can appear in minimally bounded or non-bounded sentences. Partitive plural measure adverbials are compatible with non-boundedness only. Differently from objects, measure adverbials do not display aspectual case alternation proper. Moreover, not all case alternating measure phrases that are discussed in earlier sources can

be considered measure adverbials.

2 Motion verbs

The following examples present the patterns of case marking in sentences with motion verbs, objects, and measure adverbials. The examples are variations of example (13) with a composite directed motion predicate and a distance measure adverbial. The composite motion predicate *edasi+ sõidutama* 'drive on, further' has three aspectual readings. The non-bounded verb *sõidutama* 'drive' in a sentence with a total object (TO) that is modified by the particle or adverb *edasi* 'further' and a bounded adverbial (BA) appears in a maximally bounded sentence (16).

(16)	*Takso*	*sõidutas*	*Peetri*	*ühe*	*kilomeetri*	*edasi*
	Taxi.nom	drive.3.sg.past	Peeter.gen	one.gen	kilometer.gen	further

'The taxi drove Peeter further (by) one kilometer.'

The non-bounded verb *sõidutama* 'drive' in a sentence with *edasi* 'further', a partitive object (PO) and a bounded adverbial appears in a minimally bounded sentence (17).

(17)	*Takso*	*sõidutas*	*Peetrit*	*ühe*	*kilomeetri*	*edasi*
	Taxi.nom	drive.3.sg.past	Peeter.part	one.gen	kilometer.gen	further

'The taxi drove Peeter further (by) one kilometer.'

The non-bounded verb *sõidutama* 'drive' in a sentence with *edasi* 'further', a partitive object (PO), and a non-bounded adverbial (N-BA) appears in a non-bounded sentence (18).

(18)	*Takso*	*sõidutas*	*Peetrit*	*mitmeid*	*kilomeetreid*	*edasi.*
	Taxi.nom	drive.3.sg.past	Peeter.part	many.pl. part	km.pl.part	further

'Taxi was driving/drove Peeter many kilometers further.'

For a clearer picture, the results can be summarized as follows:

1. maximally bounded (16) (TO, BA)
2. minimally bounded (17) (PO, BA)
3. non-bounded (18) (PO, N-BA).

3 Omitted measures

This section proposes a hypothesis for the bounded interpretation in (1). Only with some predicates, the interpretation of minimal boundedness (cf. (17) above) emerges without measure adverbials. Sentences (19) – (21) repeat the previous examples with omitted measure adverbials.

(19) *Takso* *sõidutas* *Peetri* *edasi*
Taxi.nom drive.3.sg.past Peeter.gen further
'The taxi drove Peeter further.'

By entailment, Peeter has reached the endpoint of the journey in (19). In example (20), Peeter is understood to have reached a certain location that is 'further' and the context allows for interpreting this point as the intended endpoint of the event of driving Peter.

(20) *Takso* *sõidutas* *Peetrit* *edasi*
Taxi.nom drive.3.sg.past Peeter.part further
'The taxi drove Peeter further.'

By implicature, this location is not the intended endpoint of Peeter's journey but rather the actual endpoint. However, the context still supports the spatially bounded interpretation: some distance is traversed and the event is over. Finally, sentence (20) can have a non-bounded interpretation of ongoing activity; the gloss would more accurately read as 'The taxi drove/was driving Peeter further' in that case.

In sum, the omission of measure adverbials in sentences with some motion verbs does not necessarily change the minimal boundedness of the sentence. Instead, the omission results in two possible interpretations that correspond to the effect of bounded and non-bounded measure adverbials. The hypothesis is that this effect emerges due to the nature of the predicate. The following section, therefore, introduces the distinction between scalar and nonscalar predicates in order to establish whether minimal boundedness effect emerges only when the predicate is scalar.

4 Omitted measures with nonscalar predicates

This section introduces a distinction between scalar and nonscalar predicates and demonstrates that sentences with omitted bounded measure adverbials do not allow for a bounded interpretation with nonscalar predicates. Scalar or gradable predicates, such as *lengthen, widen, shorten*, etc, are understood here

as predicates that denote a change by degree. The degree can be left unspecified or be specified by bounded adverbials. Frequently, these predicates are referred to as degree achievement verbs or verbs of gradual change. This article examines the composite predicate *edasi sõidutama* 'drive, take further', which is scalar; *sõidutama* 'drive' is not. The adverb or particle *edasi* 'further' contibutes the component of degreewise, gradual progression to the motion predicate and influences the aspectual interpretations. It is already known from examples (12) and (13) that the bounded interpretation is available for scalar and nonscalar predicates alike (naturally, with measure adverbials). This section presents three additional facts. Firstly, two total case marked measure phrases appear in one clause only with scalar predicates, as witnessed by the ungrammatical example (21) with a non-scalar predicate.

(21) **Takso* *sõidutas* *Peetri* *ühe* *kilomeetri.*
Taxi.nom drive.3.sg.past Peeter.gen one.gen kilometer.gen
Meaning: 'The taxi drove Peeter one kilometer.'

Secondly, without any bounded measure adverbial, the nonscalar predicate in (22) has a non-bounded interpretation only.

(22) *Takso* *sõidutas* *Peetrit.*
Taxi.nom drive.3.sg.past Peeter.part
'The taxi drove/was driving Peeter.'

Thirdly, the minimally bounded interpretation does not emerge with a nonscalar predicate without a measure adverbial. This fact proves that the predicate with the added adverb or particle *edasi* 'further' (as in (20)) is different from the one without. Scalarity (the property of degreewise, gradual change) is thus a relevant meaning component that is present in some verbs and missing in others. The following subsection gives an account of Estonian case marking in a grammar and makes some suggestions why the double total case marking is available in some clauses.

5 Total objects and bounded adverbials in Estonian grammar

The following sketch of case marking is embedded in the Lexical Functional Grammar framework. I use the constructive case model proposed in Nordlinger and Sadler (2004), where „inside-out constraints" are associated with lexical entries. Such constraints enable nominal constituents to define larger f-(unctional)structure context. Nordlinger and Sadler discuss Pitta Pitta, where the objects of non-future tense clauses have an accusative marker *-nha* and objects

of future-tense clauses have *-ku* as the accusative marker (Nordlinger and Sadler 2004: 610). Previous sections showed that, partly, in Estonian, the situation is similar, since aspect is not encoded morphologically on the verb, but on the objects and adverbials (adjuncts). The approach of Nordlinger and Sadler (2004) to dependent nominal case that encodes clausal tense, aspect, and mood is partly suitable for an account of Estonian case phenomena. The total case on objects and adjuncts alike is associated with boundedness. I present the lines of the entry for a total case marked nominal head in (23) – (26):

(23)
[„Total" case] (↑CASE) = TOT line (a)

In (23), line (a) of the entry encodes that the given bound morpheme, being part of the lexical entry of a nominal that is inserted in the constituent structure (in Estonian, as genitive or nominative stem of a nominal), contributes the attribute CASE with the value „total" into the functional structure corresponding to the nominal.

(24)
(OBJ ↑) V (ADJ↑) line (b)

Line (b) presented in (24) contains inside-out designators and ensures with its disjunction that either the attribute object or an adjunct must be constructed in a higher functional structure, which contains the information about the nominal. The two alternative grammatical functions are not sufficient to define the semantic conditioning of the total case. Basically, it needs to be fixed that the total case appears in case of boundedness, that is, the clause describes an event with a set endpoint. The link to semantics can be established via a constraint that is added to the lexical entry of each total case marked nominal (25).

(25)
((GF(∈)↑)B) line (c)

This existential constraint in (25) fixes „the bounded meaning". The inside out designator ensures that the higher f-structure contains an attribute („bounded") with the positive value. This higher f-structure constructs also a grammatical function (GF) attribute (in fact, either an adjunct or an object). The f-structure of any adjunct is a member of the set of f-structures, which fill the ADJ function. The f-structure of it is ↑, and the path out to the largest f-structure is through a member of a set, (ADJ ∈ ↑), hence the necessity for the sign „∈" for indicating set membership. Objects have to be captured by the same existential constraint, but they are not members of a set of f-structures, hence the

optionality of „∈".

Not all morphological cases need to be analysed as constructive case. In the case of total objects and bounded adjuncts constructive case is fully justified, since the two different functions that in addition to identical case marking share also identical semantics within the VP. There is practically no other suitable account to capture the common semantics and formal regularity of expression. For objects and adjuncts that appear in clauses that are not bounded, a default rule, which ultimately has to be associated with the phrase structure rules of the VP and some additional information if the account is extended beyond the VP, ensures that they are assigned the partitive case (26).

(26)
((↑CASE) = PART)

For instance, the partitive of negation is taken care of by this default rule: if there is no bounded event, the semantic constraint associated with the total case does not allow for the association and the default partitive case is assigned. Case must be assigned, since this is required by a general wellformedness principle in Estonian grammar (27).

(27)
NP: (↑CASE)

These constraints and rules handle the partitive and total case marking on the objects and adverbials in Estonian and their link to boundedness. Also, the sketched semantics-based approach to case marking may offer new insights into explaining the paradox of two accusatives in a clause demonstrated in section 4. Namely, as witnessed by sentences (13) and (21) above, scalar predicates can have total(/accusative) case marking on two phrases in a clause. As their speciality, scalar predicates allow for the specification of gradual progress by a bounded adverbial and, like other predicates, the specification about maximal boundedness. An explanation that resides on lexical and semantic grounds seems to be better motivated than a purely syntactic account to structural case assignment, which may have difficulties in explaining two semantically conditioned accusatives in one clause. Arguing that scalar verbs are modified by bounded adverbials and marked with inherent or lexical case exactly as scalar adjectives does not help: the modified adjective *üks meeter pikk* 'one meter long' has nominative head marking in the measure phrase whereas *sõidutas Peetri ühe kilomeetri edasi* 'drove Peeter one kilometer further' (cf. example (13)) has total case head marking. This example, however, also shows that the total case needs to be partly explained in terms of a specific configuration or the

presence of a feature, such as tense. Those issues will be left for further study.

In sum, this subsection accounts for total and partitive objects of transitive sentences, total case marking on adverbials in intransitive sentences and total case marking on adverbials in transitive sentences with partitive objects.

6. Conclusion

This article discusses why the bounded sentence (1) with the partitive object is challenging for aspectual accounts. The claim about sentence (1) is that it does not express the well-studied phenomenon that I termed maximal boundedness, but it expresses what I termed minimal boundedness. In sentences with partitive objects, bounded, total case marked measure adverbials can determine the minimally bounded interpretation of the sentence. Syntactically, measure adverbials can be omitted from the sentence. However, a bounded interpretation can remain and emerge only with scalar (gradual change) predicates. The availability of a bounded interpretation shows that scalar predicates differ in their aspectual behavior from nonscalar predicates. Finally, I present an account of case marking in an LFG grammar.

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Summary

The article addresses some less studied issues of Estonian case marking and aspect: partitive objects in bounded sentences, the aspectual contribution of case marking on measure adverbials, and scalar predicates. Bounded sentences with partitive objects do not express the well-documented phenomenon of (maximal) boundedness but minimal boundedness. The minimally bounded interpretation emerges by virtue of total case marked bounded measure adverbials; these adverbials can be omitted only with scalar predicates without a change in boundedness. The adverbial specifies the exact measure of the progress. An account of Estonian case marking of objects and measure adverbials is sketched in LFG.